[All Databases](#)[PubMed](#)[Nucleotide](#)[Protein](#)[Genome](#)[Structure](#)[OMIM](#)[PMC](#)[Journals](#)[Books](#)Search for [Limits](#)[Preview/Index](#)[History](#)[Clipboard](#)[Details](#)Display Show Sort by Send to [About Entrez](#)[Text Version](#)[Entrez PubMed](#)[Overview](#)[Help | FAQ](#)[Tutorial](#)[New/Noteworthy](#)[E-Utilities](#)[PubMed Services](#)[Journals Database](#)[MeSH Database](#)[Single Citation Matcher](#)[Batch Citation Matcher](#)[Clinical Queries](#)[Special Queries](#)[LinkOut](#)[My NCBI \(Cubby\)](#)[Related Resources](#)[Order Documents](#)[NLM Mobile](#)[NLM Catalog](#)[NLM Gateway](#)[TOXNET](#)[Consumer Health](#)[Clinical Alerts](#)[ClinicalTrials.gov](#)[PubMed Central](#)

1: Zhonghua Shi Yan He Lin Chuang Bing Du Xue Za Zhi.
2002 Dec;16(4):309-11.

[Related Articles,](#)
[Links](#)

[Optimized codon usage enhances the expression and immunogenicity of DNA vaccine encoding the HPV 6b E7 gene]

[Article in Chinese]

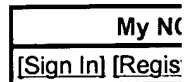
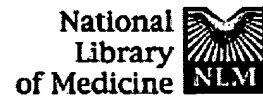
Zhao W, Yu X, Zhou Y, Bian J, Jia J, Luan Y, Qi M, Sun X, Wang H.

Department of Microbiology, School of Medicine, Shandong University, Jinan 250012, China.

OBJECTIVE: To analyze the influence of optimal codon usage on the expression levels and immunogenicity of DNA vaccines, encoding the human papillomavirus type 6b (HPV 6b) E7 gene. **METHODS:** The full length E7 gene of HPV 6b was modified to substitute human preferred codon for rarely used codon, and three mutations were introduced into the pRB binding site of HPV 6b E7 to eliminate its transformation potential. The codon optimized and mutated E7 gene (hu-mE7) were cloned into the Kpn I and EcoR I site of the pcDNA3 mammalian expression vector, the in vitro expression of the hu-mE7 gene and the immunogenicity of hu-mE7 DNA vaccine were compared with the wt-E7 gene. **RESULTS:** The in vitro expression of pcDNA3-hu-mE7 was much higher than the classical wt-E7 plasmid in monkey COS-1 cell line. Mice immunized intramuscularly with the pcDNA3-hu-mE7 showed that the codon modified E7 gene induced a stronger IFN-gamma ratios than the wt-E7 gene. **CONCLUSIONS:** These results suggest that the optimized codon usage contributes to the enhancement of gene expression and immunogenicity of HPV 6b E7 gene.

PMID: 12665891 [PubMed - indexed for MEDLINE]

Display Show Sort by Send to [Write to the Help Desk](#)[NCBI | NLM | NIH](#)[Department of Health & Human Services](#)[Privacy Statement](#) | [Freedom of Information Act](#) | [Disclaimer](#)



All Databases PubMed Nucleotide Protein Genome Structure OMIM PMC Journals Book

Search PubMed for

Limits Preview/Index History Clipboard Details

Display Summary Show 20 Sort by Send to

About Entrez

Text Version

Entrez PubMed

Overview
Help | FAQ
Tutorial
New/Noteworthy
E-Utilities

PubMed Services

Journals Database
MeSH Database
Single Citation Matcher
Batch Citation Matcher
Clinical Queries
Special Queries
LinkOut
My NCBI (Cubby)

Related Resources

Order Documents
NLM Mobile
NLM Catalog
NLM Gateway
TOXNET
Consumer Health
Clinical Alerts
ClinicalTrials.gov
PubMed Central

All: 120 Review: 3

Items 1 - 20 of 120

Page 1 of 6 Next

- ☐ 1: [Zhao W, Yu X, Zhou Y, Bian J, Jia J, Luan Y, Qi M, Sun X, Wang H.](#) Related Articles, Links

[Optimized codon usage enhances the expression and immunogenicity of DNA vaccine encoding the HPV 6b E7 gene]
Zhonghua Shi Yan He Lin Chuang Bing Du Xue Za Zhi. 2002 Dec;16(4):309-11.
Chinese.
PMID: 12665891 [PubMed - indexed for MEDLINE]
- ☐ 2: [Cheung YK, Cheng SC, Sin FW, Xie Y.](#) Related Articles, Links









Plasmid encoding papillomavirus Type 16 (HPV16) DNA constructed with codon optimization improved the immunogenicity against HPV infection.
Vaccine. 2004 Dec 16;23(5):629-38.
PMID: 15542183 [PubMed - indexed for MEDLINE]
- ☐ 3: [Zuo YG, Wang JB, Jin HZ, Yue-hua L.](#) Related Articles, Links







[Immunogenicity of mutant and wild HPV16 DNA vaccines]
Zhongguo Yi Xue Ke Xue Yuan Xue Bao. 2004 Oct;26(5):554-7. Chinese.
PMID: 15562771 [PubMed - indexed for MEDLINE]
- ☐ 4: [Liu WJ, Gao F, Zhao KN, Zhao W, Fernando GJ, Thomas R, Frazer IH.](#) Related Articles, Links

Codon modified human papillomavirus type 16 E7 DNA vaccine enhances cytotoxic T-lymphocyte induction and anti-tumour activity.
Virology. 2002 Sep 15;301(1):43-52.
PMID: 12359445 [PubMed - indexed for MEDLINE]
- ☐ 5: [Cid-Arregui A, Juarez V, zur Hausen H.](#) Related Articles, Links

A synthetic E7 gene of human papillomavirus type 16 that yields enhanced expression of the protein in mammalian cells and is useful for DNA immunization studies.
J Virol. 2003 Apr;77(8):4928-37.
PMID: 12663798 [PubMed - indexed for MEDLINE]
- ☐ 6: [Smahel M, Sima P, Ludvikova V, Vonka V.](#) Related Articles, Links

Modified HPV16 E7 Genes as DNA Vaccine against E7-Containing Oncogenic Cells.
Virology. 2001 Mar 15;281(2):231-8.
PMID: 11277695 [PubMed - indexed for MEDLINE]
- ☐ 7: [Deml L, Bojak A, Steck S, Graf M, Wild J, Schirmbeck R, Wolf H, Wagner R.](#) Related Articles, Links

-  Multiple effects of codon usage optimization on expression and immunogenicity of DNA candidate vaccines encoding the human immunodeficiency virus type 1 Gag protein.
J Virol. 2001 Nov;75(22):10991-1001.
PMID: 11602739 [PubMed - indexed for MEDLINE]
- ☐ **8:** [Liu WJ, Zhao KN, Gao FG, Leggatt GR, Fernando GJ, Frazer IH.](#) Related Articles, Links
-  Polynucleotide viral vaccines: codon optimisation and ubiquitin conjugation enhances prophylactic and therapeutic efficacy.
Vaccine. 2001 Dec 12;20(5-6):862-9.
PMID: 11738751 [PubMed - indexed for MEDLINE]
- ☐ **9:** [Kim TW, Hung CF, Juang J, He L, Hardwick JM, Wu TC.](#) Related Articles, Links
-  Enhancement of suicidal DNA vaccine potency by delaying suicidal DNA-induced cell death.
Gene Ther. 2004 Feb;11(3):336-42.
PMID: 14737094 [PubMed - indexed for MEDLINE]
- ☐ **10:** [Shi W, Bu P, Liu J, Polack A, Fisher S, Qiao L.](#) Related Articles, Links
-  Human papillomavirus type 16 E7 DNA vaccine: mutation in the open reading frame of E7 enhances specific cytotoxic T-lymphocyte induction and antitumor activity.
J Virol. 1999 Sep;73(9):7877-81.
PMID: 10438884 [PubMed - indexed for MEDLINE]
- ☐ **11:** [Mossadegh N, Gissmann L, Muller M, Zentgraf H, Alonso A, Tomakidi P.](#) Related Articles, Links
-  Codon optimization of the human papillomavirus 11 (HPV 11) L1 gene leads to increased gene expression and formation of virus-like particles in mammalian epithelial cells.
Virology. 2004 Aug 15;326(1):57-66.
PMID: 15262495 [PubMed - indexed for MEDLINE]
- ☐ **12:** [Steinberg T, Ohlschlager P, Sehr P, Osen W, Gissmann L.](#) Related Articles, Links
-  Modification of HPV 16 E7 genes: correlation between the level of protein expression and CTL response after immunization of C57BL/6 mice.
Vaccine. 2005 Jan 19;23(9):1149-57.
PMID: 15629358 [PubMed - indexed for MEDLINE]
- ☐ **13:** [Kim JW, Hung CF, Juang J, He L, Kim TW, Armstrong DK, Pai SI, Chen PJ, Lin CT, Boyd DA, Wu TC.](#) Related Articles, Links
-  Comparison of HPV DNA vaccines employing intracellular targeting strategies.
Gene Ther. 2004 Jun;11(12):1011-8.
PMID: 14985791 [PubMed - indexed for MEDLINE]
- ☐ **14:** [Narum DL, Kumar S, Rogers WO, Fuhrmann SR, Liang H, Oakley M, Taye A, Sim BK, Hoffman SL.](#) Related Articles, Links
-  Codon optimization of gene fragments encoding Plasmodium falciparum merzoite proteins enhances DNA vaccine protein expression and immunogenicity in mice.
Infect Immun. 2001 Dec;69(12):7250-3.
PMID: 11705894 [PubMed - indexed for MEDLINE]

- ☐ 15: [Smahel M, Sima P, Ludvikova V, Marinov I, Pokorna D, Vonka V.](#) [Related Articles, Links](#)
 Immunisation with modified HPV16 E7 genes against mouse oncogenic TC-1 cell sublines with downregulated expression of MHC class I molecules.
Vaccine. 2003 Mar 7;21(11-12):1125-36.
PMID: 12559790 [PubMed - indexed for MEDLINE]
- ☐ 16: [Bauer R, Himly M, Dedic A, Ferreira F, Thalhamer J, Hartl A.](#) [Related Articles, Links](#)
 Optimization of codon usage is required for effective genetic immunization against Art v 1, the major allergen of mugwort pollen.
Allergy. 2003 Oct;58(10):1003-10.
PMID: 14510717 [PubMed - indexed for MEDLINE]
- ☐ 17: [Luo LQ, Li J, Liu X, Zhang YH.](#) [Related Articles, Links](#)
 [Experimental study of the immuno-protective activity of recombinant vaccinia virus expressing HPV58 E7]
Zhongguo Yi Xue Ke Xue Yuan Xue Bao. 2003 Feb;25(1):43-6. Chinese.
PMID: 12905606 [PubMed - indexed for MEDLINE]
- ☐ 18: [Stratford R, Douce G, Zhang-Barber L, Fairweather N, Eskola J, Dougan G.](#) [Related Articles, Links](#)
 Influence of codon usage on the immunogenicity of a DNA vaccine against tetanus.
Vaccine. 2000 Nov 22;19(7-8):810-5.
PMID: 11115703 [PubMed - indexed for MEDLINE]
- ☐ 19: [Michel N, Osen W, Gissmann L, Schumacher TN, Zentgraf H, Muller M.](#) [Related Articles, Links](#)
 Enhanced immunogenicity of HPV 16 E7 fusion proteins in DNA vaccination.
Virology. 2002 Mar 1;294(1):47-59.
PMID: 11886264 [PubMed - indexed for MEDLINE]
- ☐ 20: [Liu C, Si J, Liu S, Xu X, Song G.](#) [Related Articles, Links](#)
 [Cloning of human papillomavirus type 16 E7 gene and expression in E. coli]
Zhongguo Yi Xue Ke Xue Yuan Xue Bao. 1998 Jun;20(3):168-72. Chinese.
PMID: 11367700 [PubMed - indexed for MEDLINE]

Items 1 - 20 of 120

Page

1

of 6 Next

Display

Summary



Show

20



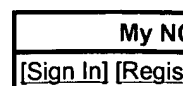
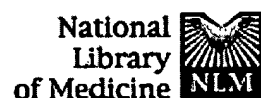
Sort by



Send to

[Write to the Help Desk](#)[NCBI | NLM | NIH](#)[Department of Health & Human Services](#)[Privacy Statement](#) | [Freedom of Information Act](#) | [Disclaimer](#)

Aug 23 2005 04:56:19



All Databases PubMed Nucleotide Protein Genome Structure OMIM PMC Journals Books

Search PubMed for [] Go Clear

Limits Preview/Index History Clipboard Details

Display Summary Show 20 Sort by Send to

About Entrez

Text Version

All: 120 Review: 3

Items 21 - 40 of 120

Previous Page 2 of 6 Next

Entrez PubMed

Overview
Help | FAQ
Tutorial
New/Noteworthy
E-Utilities

PubMed Services

Journals Database
MeSH Database
Single Citation Matcher
Batch Citation Matcher
Clinical Queries
Special Queries
LinkOut
My NCBI (Cubby)

Related Resources

Order Documents
NLM Mobile
NLM Catalog
NLM Gateway
TOXNET
Consumer Health
Clinical Alerts
ClinicalTrials.gov
PubMed Central

- ☐ 21: [Osen W, Peiler T, Ohlschlager P, Caldeira S, Faath S, Michel N, Muller M, Tommasino M, Jochmus I, Gissmann L.](#) Related Articles, Links

A DNA vaccine based on a shuffled E7 oncogene of the human papillomavirus type 16 (HPV 16) induces E7-specific cytotoxic T cells but lacks transforming activity.
Vaccine. 2001 Jul 20;19(30):4276-86.
PMID: 11457555 [PubMed - indexed for MEDLINE]

- ☐ 22: [Liu F, Wang JB, Zuo YG, Liu YH, Ma DL.](#) Related Articles, Links

Construction and immunogenicity of human papillomavirus type 6b L1 recombinant plasmid.
Chin Med Sci J. 2004 Sep;19(3):233-6.
PMID: 15506656 [PubMed - indexed for MEDLINE]

- ☐ 23: [Peng S, Ji H, Trimble C, He L, Tsai YC, Yeatermeyer J, Boyd DA, Hung CF, Wu TC.](#) Related Articles, Links

Development of a DNA vaccine targeting human papillomavirus type 16 oncoprotein E6.
J Virol. 2004 Aug;78(16):8468-76.
PMID: 15280455 [PubMed - indexed for MEDLINE]

- ☐ 24: [Liu H, Zhu P, Lin NJ, Zhang Y, Bu DF, Wang YJ, Wang YQ, Yang Y.](#) Related Articles, Links

[Development of IgHV family specific nucleic acid vaccine against lymphoma by construction of fusion gene of immunoglobulin heavy chain variable region and cytokine]
Zhonghua Yi Xue Za Zhi. 2004 Jan 2;84(1):48-53. Chinese.
PMID: 14990159 [PubMed - indexed for MEDLINE]

- ☐ 25: [Laassri M, Gul'ko L, Vinokurova S, Kisseljova N, Veiko V, Kisseljov F.](#) Related Articles, Links

Cloning of E6 and E7 genes of human papilloma virus type 18 and transformation potential of E7 gene and its mutants.
Virus Genes. 1999;18(2):139-49.
PMID: 10403700 [PubMed - indexed for MEDLINE]

- ☐ 26: [Ramakrishna L, Anand KK, Mohankumar KM, Ranga U.](#) Related Articles, Links

Codon optimization of the tat antigen of human immunodeficiency virus type 1 generates strong immune responses in mice following genetic immunization.
J Virol. 2004 Sep;78(17):9174-89.

PMID: 15308713 [PubMed - indexed for MEDLINE]

- ☐ 27: [Moore RA, Santos EB, Nicholls PK, White KL, Anderson DM, Lloyd A, Topley P, Romanos M, Thomsen L, Parmar V, Walcott S, Gough GW, Stanley MA.](#) Related Articles, Links



Intraepithelial DNA immunisation with a plasmid encoding a codon optimised COPV E1 gene sequence, but not the wild-type gene sequence completely protects against mucosal challenge with infectious COPV in beagles.

Virology. 2002 Dec 20;304(2):451-9.

PMID: 12504584 [PubMed - indexed for MEDLINE]

- ☐ 28: [Kim SJ, Lee C, Lee SY, Kim I, Park JS, Sasagawa T, Ko JJ, Park SE, Oh YK.](#) Related Articles, Links



Enhanced immunogenicity of human papillomavirus 16 L1 genetic vaccines fused to an ER-targeting secretory signal peptide and RANTES. Gene Ther. 2003 Aug;10(15):1268-73.

PMID: 12858192 [PubMed - indexed for MEDLINE]

- ☐ 29: [Xu XM, Zhu MZ, Zhang MC, Si JY, Li K, Song GX.](#) Related Articles, Links



[Enhancement of human papillomavirus type 16E6E7 vaccine-induced specific immune response by coimmunization with B7-1 co-stimulatory gene]

Zhongguo Yi Xue Ke Xue Yuan Xue Bao. 2003 Jun;25(3):301-6. Chinese.

PMID: 12905744 [PubMed - indexed for MEDLINE]

- ☐ 30: [Frelin L, Ahlen G, Alheim M, Weiland O, Barnfield C, Liljestrom P, Sallberg M.](#) Related Articles, Links



Codon optimization and mRNA amplification effectively enhances the immunogenicity of the hepatitis C virus nonstructural 3/4A gene.

Gene Ther. 2004 Mar;11(6):522-33.

PMID: 14999224 [PubMed - indexed for MEDLINE]

- ☐ 31: [Zhou W, Cook RF, Cook SJ, Hammond SA, Rushlow K, Ghabrial NN, Berger SL, Montelaro RC, Issel CJ.](#) Related Articles, Links



Multiple RNA splicing and the presence of cryptic RNA splice donor and acceptor sites may contribute to low expression levels and poor immunogenicity of potential DNA vaccines containing the env gene of equine infectious anemia virus (EIAV).

Vet Microbiol. 2002 Aug 25;88(2):127-51.

PMID: 12135633 [PubMed - indexed for MEDLINE]

- ☐ 32: [Zheng J, Zhang FP, Si LS, Dong XP, Wang YL.](#) Related Articles, Links



[Preliminary study of HPV16 L1/E6-E7 chimeric recombinant DNA vaccine plasmid construction and expression in CHO cell]

Zhonghua Shi Yan He Lin Chuang Bing Du Xue Za Zhi. 2003 Mar;17(1):66-9. Chinese.

PMID: 12870023 [PubMed - indexed for MEDLINE]

- ☐ 33: [Hallez S, Simon P, Maudoux F, Doyen J, Noel JC, Beliard A, Capelle X, Buxant F, Fayt I, Lagrost AC, Hubert P, Gerday C, Burny A, Boniver J, Foidart JM, Delvenne P, Jacobs N.](#) Related Articles, Links



Phase I/II trial of immunogenicity of a human papillomavirus (HPV) type 16 E7 protein-based vaccine in women with oncogenic HPV-positive cervical intraepithelial neoplasia.

Cancer Immunol Immunother. 2004 Jul;53(7):642-50. Epub 2004 Feb 17.

PMID: 14985860 [PubMed - indexed for MEDLINE]

- ☐ **34:** [Bojak A, Wild J, Deml L, Wagner R.](#) [Related Articles, Links](#)



Impact of codon usage modification on T cell immunogenicity and longevity of HIV-1 gag-specific DNA vaccines.

Intervirology. 2002;45(4-6):275-86.

PMID: 12566710 [PubMed - indexed for MEDLINE]

- ☐ **35:** [Braakhuis BJ, Snijders PJ, Keune WJ, Meijer CJ, Ruijter-Schippers HJ, Leemans CR, Brakenhoff RH.](#) [Related Articles, Links](#)



Genetic patterns in head and neck cancers that contain or lack transcriptionally active human papillomavirus.

J Natl Cancer Inst. 2004 Jul 7;96(13):998-1006.

PMID: 15240783 [PubMed - indexed for MEDLINE]

- ☐ **36:** [Kotecha MT, Afghan RK, Vasilikopoulou E, Wilson E, Marsh P, Kast WM, Davies DH, Caparros-Wanderley W.](#) [Related Articles, Links](#)



Enhanced tumour growth after DNA vaccination against human papilloma virus E7 oncoprotein: evidence for tumour-induced immune deviation.

Vaccine. 2003 Jun 2;21(19-20):2506-15.

PMID: 12744885 [PubMed - indexed for MEDLINE]

- ☐ **37:** [Park JS, Rhyu JW, Kim CJ, Kim HS, Lee SY, Kwon YI, Namkoong SE, Sin HS, Um SJ.](#) [Related Articles, Links](#)



Neoplastic change of squamo-columnar junction in uterine cervix and vaginal epithelium by exogenous estrogen in hpv-18 URR E6/E7 transgenic mice.

Gynecol Oncol. 2003 Jun;89(3):360-8.

PMID: 12798696 [PubMed - indexed for MEDLINE]

- ☐ **38:** [Zhi H, Han L, Ren J, Tian H, Luo W, Liang Y, Ruan L.](#) [Related Articles, Links](#)



[Construction of recombinant vaccinia virus co-expressing mutant E6 plus E7 proteins and detection of its immunogenicity and antitumor response]

Zhonghua Shi Yan He Lin Chuang Bing Du Xue Za Zhi. 2002 Dec;16(4):341-4. Chinese.

PMID: 12665900 [PubMed - indexed for MEDLINE]

- ☐ **39:** [Trimble C, Lin CT, Hung CF, Pai S, Juang J, He L, Gillison M, Pardoll D, Wu L, Wu TC.](#) [Related Articles, Links](#)



Comparison of the CD8+ T cell responses and antitumor effects generated by DNA vaccine administered through gene gun, biojector, and syringe.

Vaccine. 2003 Sep 8;21(25-26):4036-42.

PMID: 12922140 [PubMed - indexed for MEDLINE]

- ☐ **40:** [Avvakumov N, Torchia J, Mymryk JS.](#) [Related Articles, Links](#)



Interaction of the HPV E7 proteins with the pCAF acetyltransferase.

Oncogene. 2003 Jun 19;22(25):3833-41.

PMID: 12813456 [PubMed - indexed for MEDLINE]

Items 21 - 40 of 120

[Previous](#)

Page

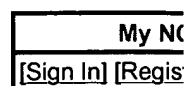
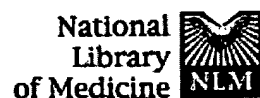
2

of 6 [Next](#)

Display [Summary](#) Show [20](#) Sort by Send to

[Write to the Help Desk](#)

[NCBI](#) | [NLM](#) | [NIH](#)



All Databases PubMed Nucleotide Protein Genome Structure OMIM PMC Journals Books

Search PubMed for

Limits Preview/Index History Clipboard Details

Display Abstract Show 20 Sort by Send to

About Entrez

Text Version

Entrez PubMed

Overview

Help | FAQ

Tutorial

New/Noteworthy

E-Utilities

PubMed Services

Journals Database

MeSH Database

Single Citation Matcher

Batch Citation Matcher

Clinical Queries

Special Queries

LinkOut

My NCBI (Cubby)

Related Resources

Order Documents

NLM Mobile

NLM Catalog

NLM Gateway

TOXNET

Consumer Health

Clinical Alerts

ClinicalTrials.gov

PubMed Central

☐ 1: Zhonghua Yi Xue Za Zhi. 2002 May 10;82(9):587-9.

[Related Articles, Links](#)

[Immunogenicity study of HPV 6b virus-like particles]

[Article in Chinese]

Liu Y, Liu X, Frazer IH.

Department of Dermatology, Peking Union Medical College Hospital, Chinese Academy of Medical Sciences & Peking Union Medical College, Beijing 100730, China.

OBJECTIVE: To confirm human papillomavirus (HPV) 6b virus-like particles (VLP) have strong immunogenicity and the protective antibody induced by HPV 6b VLP have cross-reactive immunity against HPV11 VLP and bovine papillomavirus (BPV) 1 VLP. **METHOD:** The late gene L1 for HPV6b, HPV 11 and L1/L2 for BPV 1 were molecularly cloned into recombinant baculovirus, respectively. The recombinant viruses were expressed in insect cells (Sf-9 cells). The expressed L1 proteins self-assembled into virus-like particles (VLP) for HPV6b, HPV 11 and BPV 1. VLP were purified from insect cell nuclei by CsCl centrifugation. The Balb/c mice were immunized on days 0 and 21 with 50 microgram HPV6b VLP intramuscularly. Sera were collected after a further 7 days and 3 months. The titers of IgG against HPV 6b VLP, HPV 11 VLP and BPV 1 VLP were detected. Hemagglutination inhibition assay was conducted to detected that whether antisera produced by HPV 6b VLP immunization could inhibit HPV11 VLP and BPV 1 VLP agglutinate mouse red blood cells. **RESULT:** After 7 days of two immunizations, the titers of IgG against HPV6b VLP, HPV11 VLP and BPV1 VLP were 1:6 400, 1:1 600 and 1:1 600 by ELISA, respectively. Three months later, the titers of IgG against HPV6b VLP, HPV11VLP and BPV1 VLP were 1:800, 1:400 and 1:100, respectively. Hemagglutination inhibition assay results showed that the antisera produced by HPV6b VLP inhibit HPV6b VLP and HPV11 VLP to mouse red blood cells binding. **CONCLUSION:** HPV 6b VLP have potent immunogenicity. Antisera produced by HPV6b VLP could inhibit the binding of HPV6b VLP and HPV11 VLP and cells. Both HPV6b and HPV11 share neutralizing epitopes which are cross-reactive and HPV6b VLP may be used in prophylactic and therapeutic vaccine for HPV6b and/or HPV 11 infections.

PMID: 12133476 [PubMed - indexed for MEDLINE]

Display Show Sort by Send to

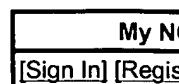
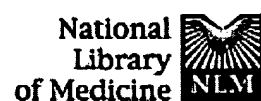
[Write to the Help Desk](#)

[NCBI](#) | [NLM](#) | [NIH](#)

[Department of Health & Human Services](#)

[Privacy Statement](#) | [Freedom of Information Act](#) | [Disclaimer](#)

Aug 23 2005 04:56:19



All Databases PubMed Nucleotide Protein Genome Structure OMIM PMC Journals Books

Search PubMed for

Limits Preview/Index History Clipboard Details

Display Abstract Show 20 Sort by Send to

About Entrez

Text Version

Entrez PubMed

Overview

Help | FAQ

Tutorial

New/Noteworthy

E-Utilities

PubMed Services

Journals Database

MeSH Database

Single Citation Matcher

Batch Citation Matcher

Clinical Queries

Special Queries

LinkOut

My NCBI (Cubby)

Related Resources

Order Documents

NLM Mobile

NLM Catalog

NLM Gateway

TOXNET

Consumer Health

Clinical Alerts

ClinicalTrials.gov

PubMed Central

☐ 1: J Virol. 1992 Apr;66(4):2008-19.

Related Articles, Links

FREE full text article
in PubMed Central**Human antibodies recognize multiple distinct type-specific and cross-reactive regions of the minor capsid proteins of human papillomavirus types 6 and 11.****Yaegashi N, Jenison SA, Batra M, Galloway DA.**

Fred Hutchinson Cancer Research Center, Seattle, Washington 98104-2092.

Human serum samples derived from a case-control study of patients with cervical carcinoma (n = 174) or condyloma acuminatum (n = 25) were tested for the presence of immunoglobulin G antibodies to human papillomavirus type 6 (HPV6) L2 and HPV11 L2 recombinant proteins in a Western immunoblot assay. Thirty-six samples (18%) were positive for HPV6 L2 antibodies alone, 25 (13%) were positive for HPV11 L2 antibodies alone, and 34 (17%) were positive for both HPV6 L2 and HPV11 L2 antibodies. Thirty samples that were positive for both antibodies were tested for the presence of HPV6-HPV11 L2 cross-reactive antibodies. Fifteen (50%) serum samples contained HPV6-HPV11 L2 cross-reactive antibodies, and 15 (50%) contained independent, type-specific HPV6 L2 and HPV11 L2 antibodies. Altogether, 82% of the HPV6 L2 and HPV11 L2 antibody reactivities were type specific and 18% were HPV6-HPV11 cross-reactive. There was no significant difference in the prevalence of antibody reactivities between samples from patients with cervical carcinoma and those with condyloma acuminatum. Deletion mapping identified five HPV6 L2 regions that reacted with HPV6 type-specific antibodies: 6U1 (amino acids [aa] 152 to 173), 6U2 (aa 175 to 191), 6U3 (aa 187 to 199), 6U4 (aa 201 to 217), and 6U5 (aa 351 to 367). Five HPV11 L2 regions that reacted with HPV11 type-specific antibodies were identified: 11U1 (aa 49 to 84), 11U2 (aa 147 to 162), 11U3 (aa 179 to 188), 11U4 (aa 180 to 200), and 11U5 (aa 355 to 367). Two HPV6-HPV11 cross-reactive regions were identified: 6CR1 (HPV6 L2 aa 106 to 128)/11CR1 (HPV11 L2 aa 103 to 127) and 6CR2 (HPV6 L2 aa 187 to 199)/11CR2 (HPV11 L2 aa 180 to 200).

PMID: 1312618 [PubMed - indexed for MEDLINE]

Hit List

[Clear](#)[Generate Collection](#)[Print](#)[Fwd Refs](#)[Bkwd Refs](#)[Generate OACS](#)

Search Results - Record(s) 1 through 3 of 3 returned.

☐ 1. Document ID: US 6887478 B2

L10: Entry 1 of 3

File: USPT

May 3, 2005

US-PAT-NO: 6887478

DOCUMENT-IDENTIFIER: US 6887478 B2

TITLE: Formalin-treated human papillomavirus L1 protein vaccine

DATE-ISSUED: May 3, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
<u>Schlegel; C. Richard</u>	Rockville	MD		
Jenson; A. Bennett	Rockville	MD		
Ghim; Shin-je	Washington	DC		

US-CL-CURRENT: 424/204.1; 530/300, 536/23.72

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	Keywords	Drawings
------	-------	----------	-------	--------	----------------	------	-----------	--------	----------	----------

☐ 2. Document ID: US 6485728 B2

L10: Entry 2 of 3

File: USPT

Nov 26, 2002

US-PAT-NO: 6485728

DOCUMENT-IDENTIFIER: US 6485728 B2

TITLE: Formalin-Inactivated human papillomavirus L1 protein vaccine

DATE-ISSUED: November 26, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
<u>Schlegel; C. Richard</u>	Rockville	MD		
Jenson; A. Bennett	Rockville	MD		
Ghim; Shin-je	Washington	DC		

US-CL-CURRENT: 424/204.1; 424/184.1, 424/186.1, 424/199.1, 536/23.72

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	Keywords	Drawings
------	-------	----------	-------	--------	----------------	------	-----------	--------	----------	----------

☐ 3. Document ID: US 5874089 A

L10: Entry 3 of 3

File: USPT

Feb 23, 1999

US-PAT-NO: 5874089

DOCUMENT-IDENTIFIER: US 5874089 A

**** See image for Certificate of Correction ****

TITLE: Protecting against canine oral papillomavirus (copy)

DATE-ISSUED: February 23, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Schlegel; C. Richard	Rockville	MD		
Jenson; A. Bennett	Rockville	MD		
Ghim; Shin-je	Washington	DC		

US-CL-CURRENT: 424/204.1; 424/184.1, 424/186.1, 424/192.1, 424/199.1, 435/235.1,
435/320.1, 435/5, 435/69.1, 435/69.3, 536/23.72

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw D
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------	--------	-----	--------

Clear

Generate Collection

Print

Fwd Refs

Bkwd Refs

Generate OACS

Terms

Documents

Schlegel C Richard.in.

3

Display Format: CIT

Change Format

[Previous Page](#)[Next Page](#)[Go to Doc#](#)

WEST Search History

[Hide Items](#)[Restore](#)[Clear](#)[Cancel](#)

DATE: Monday, August 29, 2005

Hide?	Set Name	Query	Hit Count
		<i>DB=PGPB; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L12	20050037337 and coefficient	1
<input type="checkbox"/>	L11	Ertl.in. and papilloma	5
		<i>DB=USPT; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L10	Schlegel C Richard.in.	3
<input type="checkbox"/>	L9	HPV-6 and Salimi.xp.	23
<input type="checkbox"/>	L8	Ertl.in. and papillomavirus	0
<input type="checkbox"/>	L7	Ertl.in. and papilloma	3
<input type="checkbox"/>	L6	Ertl.in. and papillom	0
<input type="checkbox"/>	L5	Ertl.in.	100
<input type="checkbox"/>	L4	HPV-6 and HPV-11.clm.	14
<input type="checkbox"/>	L3	HPV6 and HPV-11.clm.	1
<input type="checkbox"/>	L2	HPV6 and HPV11.clm.	7
<input type="checkbox"/>	L1	HPV6 and HPV11	63

END OF SEARCH HISTORY